# NONLINEAR PANEL DATA MODELS

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## 1. Models, parameters of interest, and incidental parameters

1.1 Review of some nonlinear models
1.2 Policy parameters
1.3 The incidental parameter problem

## 2. Static fixed effects

2.1 Fixed effects approaches
   a) Conditional MLE: Logit
   b) Likelihood separation: Poisson
   c) Maximum score
2.2 Fixed T identifiability
2.3 Bias reduction

## 3. Static random effects

3.1 Uncorrelated and correlated random effects
3.2 Semiparametric approaches
3.3 Simulation based estimation

## 4. Dynamic models

4.1 The initial conditions problem
4.2 Dynamic discrete choice and duration
4.3 Random effects
   a) State dependence
   b) Latent variable dynamics
4.4 Illustration: Welfare participation dynamics
4.5 Fixed effects fixed-T approaches

## 5. General predetermined variables

5.1 Linear and multiplicative models
5.2 Semiparametric random effects
5.3 The feedback process problem

## 6. Bounds and bias reduction in dynamic models

6.1 Fixed T Bounds
6.2 Large T and N

**Readings on nonlinear panel data models**

General

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Static models: Random effects

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Large T and N bias reduction

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Dynamic models

• Random effects

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• Bounds

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Applications

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